

Rev. David Inglis
Henrietta UCC
Henrietta, NY

Genesis 1:1-5

September 17, 2000
Rev. David Inglis

Science and Faith, 1: “God and Darwin: Enemies or Friends?”

In 1859, a book was published that rocked the Western world. Preachers railed against it from their pulpits. School boards came to blows in how to deal with it. The right to teach it was tried in court. More than any other book written in the past 1000 years, this book changed the way we view ourselves as humans and understand the mysteries of life itself.

The book was Charles Darwin’s *Origin of the Species*. His ideas are *still* making news: in Kansas’ decision last year to require schools to present evolution as an unproven theory alongside the Biblical account of creation; in the current project of decoding the human genome; and in the controversies surrounding genetic engineering.

Darwin argued that all life gradually evolved over eons of time, rather than being created in three days as the Bible implies. He argued that nature selects which genes are passed on to succeeding generations through “the survival of the fittest,” a sometimes brutal, values-free competition for survival. He said that, like all other species, human beings evolved by natural selection from more primitive organisms--contradicting a literal reading of the story of Adam and Eve and their descendants’ special relationship with God.

When a member of British society heard Darwin’s theory, he gasped, “Let us hope that it is not true. But if it is, let us hope that it does not become generally known!”¹

Over the decades, Darwin’s ideas became both generally known and widely accepted. This created a crisis of faith for many thinking Christians. Which should they believe--the Bible or Charles Darwin? As people of faith, they wanted to choose the Bible. But every year new discoveries in fossil records, carbon dating, and genetics research added more and more evidence to Darwin’s arguments and undermined the Biblical story as a literally true account of creation.

As if this weren’t disturbing enough, science was to be gradually lifting the veil on *all* the mysteries of life and the universe. It was laying open the physical, chemical and electromagnetic processes at work in everything from the blooming of a flower to the birth of stars. And there was no God in the scientist’s formulas. The thrust of science was deterministic reductionism. The premise was, if you knew enough data, you could theoretically understand and predict anything. We and everything else were seen as billiard balls--acted on by other forces, then in turn acting on others in predictable ways.

It seemed that God was clearly out of a job. There was no room for miracles or

divine intervention in this model. Everything could be explained by natural processes. Even morality and values held no sway, if our choices and behavior are all determined anyway. At best, God was the master Clock Maker who designed the mechanism and the laws by which it operated, set it in motion, and then left it to run its course.

This is why science and religion, Darwin and Genesis, have so often seemed to be enemies. Just consider what was at stake for people of faith: belief in God; the literal truth of the Bible; the sense that we humans have some meaning or value in the scheme of things; the premise of free will, personal responsibility, and moral choice; and the higher values than self preservation and survival. And yet science seemed to have all the evidence on its side. People began saying that God was dead—and lightning didn't come out of heaven to strike them down.

But that's not the end of the story. As science relentlessly penetrated more and more deeply into the secrets of nature, it discovered something just as shocking and potentially revolutionary to *science* as *Darwin's* ideas were to faith. It turns out that the cosmic big clock doesn't really run like mechanical clockwork after all. Scientists working with atoms and subatomic particles discovered that, if you look at things closely enough, even though all things are *influenced* by the forces of nature, nothing is *determined*. An element of freedom is designed into *everything*, down to the tiniest particles we can detect.

As just one example, what you see in this mirror is the result of photons--tiny particles of light--reflecting off its shiny surface. Scientists have discovered that, on average, about 95% of the photons tend to bounce off this surface, and 5% actually pass through. Baffled scientists have also discovered that we can in no way predict *which* ones will bounce off and which will pass through. And in other experiments like this, they have found it impossible to predict which particles or atoms will behave one way and which another. And here is the mystery. It is not because we don't have enough data, but because there is a built-in apparent "randomness" or unpredictability in all of nature. The natural laws that 19th-Century scientists thought were inviolable turn out to be more like "laws of averages" when you look at anything closely enough.

Now it turns out that the process of DNA replication, which is the basis for all reproduction and evolution, greatly amplifies the effects of these unpredictable little outbursts of freedom. One tiny electron unexpectedly "doing its own thing" can change any one of the four chemical bases in the DNA that gets passed on to the next gene, which can have a permanent affect on one of the characteristics of the organism.

This element of unpredictability in no way proves the existence of God, although it *is* an absolutely ingenious way of balancing order and chaos so that life can adapt and evolve. But it suddenly makes room for an influence, a mysterious force, working gently and subtly *through nature*, to move life towards some end that could not be predicted by just observing the predetermined running of the "cosmic clock."

Well, do we have any scientific evidence that such an intelligent force might have been shaping the universe and the world? Indeed we do, though you seldom hear about it. Here are a few tantalizing pieces of evidence.

The force of gravity is a very weak force. It is measured as .00000000067 meters squared over kilograms. That's why on a bad hair day, you'd never know that your body is exerting any gravitational force on your hair at all. That's why you need a huge mass, like a planet or moon, to really know gravity is there. Astrophysicists have discovered that if this force were even slightly greater, not only would we weigh more,

which would not be a good thing, but we wouldn't be here. Why? Slightly more gravity would have slowed the expansion of the universe just slightly right after the so-called big bang. Our generation's most brilliant theoretical physicist, Stephen Hawking, said, "If the rate of expansion one second after the big bang had been smaller by even one part in a hundred thousand million million, [the universe] would have recollapsed before it reached its present size." Conversely, if gravity were slightly weaker, the dust from the big bang would never have coalesced into stars, planets, us, or our bathroom scales.²

So you can be thankful those bathroom scales say exactly what they say. Any different, and none of us would be here!

Gravity is one of four fundamental forces of the universe discovered so far. If the stronger nuclear force that holds atoms together were slightly weaker, no elements other than hydrogen would have been formed after the big bang. If slightly stronger, all the hydrogen in the universe would be converted into heavier elements--no sun, no stars, no water, espresso coffee would be *extremely* strong, and nobody would be around to taste it.

If another fundamental force, electromagnetism, were slightly stronger, electrons would be so tightly bound to atoms that atoms couldn't form into chemical compounds. Any weaker, and atoms would disintegrate at room temperature, and we'd have to live in refrigerators to keep from flying apart, which probably wouldn't help our weight either. If the resonance level of electrons in the carbon atom were slightly lower, carbon atoms would not have formed within stars. Without carbon, there would be no life or charcoal briquettes as we know them.

Stephen Hawking said, "The odds against a universe like ours emerging out of something like the Big Bang are enormous. I think there are clearly religious implications."³ This is about as close to a proclamation of faith as a world-renowned theoretical physicist can get away with.

If the precursors to vertebrates hadn't survived the Cambrian period half a billion years ago, most of us here would look and behave like insects or clams, and you'd probably understand even less of this sermon. If a huge meteor had missed the earth instead of colliding with it 60 million years ago, dinosaurs would probably still be eating the minority mammal population, depriving them of their basic rights, and getting the best sports contracts.

The number of if's and what-if's are mind boggling. Would blind chance alone have produced a universe with just the right balance of order so as not to be chaotic and freedom so as not to be deterministic? Would "survival of the fittest" alone have evolved creatures that would eventually ponder the universe's mysteries, be capable of compassion and wisdom, compose symphonies, and reach for God? Can the atoms found in the dust of the earth and that make up our bodies account for the life of Jesus Christ, or even mortals like Mahatma Gandhi, Mother Theresa, or Desmond Tutu?

The evidence for a power like the Spirit we Christians call God working through nature seems very strong indeed.

Charles Darwin himself wrote,

[I am overwhelmed by] the extreme difficulty, or rather the impossibility, of conceiving this immense and wonderful universe, including man..., as the result of blind chance or necessity. When thus reflecting I feel compelled to look to a First Cause having an intelligent mind in some degree analogous to

that of man.⁴

I think, in spite of himself, Darwin was feeling something very similar to what the Psalmist felt when he wrote these words:

When I look at your heavens, the work of your fingers,
the moon and the stars that you have established;
what are human beings that you are mindful of them,
mortals that you care for them?
Yet you have made them a little lower than God,
and crowned them with glory and honor....
O Lord, our Sovereign, how majestic is your name in all the earth!

(Psalm 8:3-5, 9)

So are Darwin and God enemies? Are science and faith opposites? Only if the God you believe in refuses to get His hands dirty and work *through* the processes of nature that God Himself created. But that flies in the face of the creation story I read from today. Or only if you believe in a science that sees the universe as either totally deterministic or totally random. And that flies in the face of scientific evidence or only if you believe in a universe and its creatures whose dumb luck is astronomical beyond all reckoning. And that flies in the face of plain old common sense.

The Psalmist wrote, “The heavens are telling the glory of God; and the firmament proclaims his handiwork.” (Psalm 19:1). In his own way Charles Darwin was also proclaiming the ingenious glory of God. Darwin helped us understand and appreciate more fully the awesome handiwork of our Creator. Thank God for Charles Darwin!

1. In Kenneth R. Miller, *Finding Darwin's God*, Cliff Street Books, 1999, p. 210.
2. *Ibid.*, pp. 227-228.
3. *Ibid.*, p. 228-229.
4. *Ibid.*, p. 287.